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DISCUSSION AND CORRESPONDENCE.

THE USE OF THE WORD *GEEST* IN GEOLOGY.

TO THE EDITOR OF SCIENCE: The *American Geologist* for December, 1902, reprints an extract from the 11th Annual Report U. S. Geological Survey, by W J McGee, upon the use of the term *geest* in geology. Dr. McGee calls attention to the fact that there is no general term in common use to designate the undisturbed products of weathering, and proposes the Dutch word *geest*, as used by De Luc, Eaton and Beck, to distinguish such material *in situ* from *alluvium* or transported material. Dr. McGee overlooks the fact that *geest* and *alluvium* are themselves specific terms denoting members of a class, while for the class itself a common descriptive or 'denotative' term is still wanting. In his first sentence he introduces his subject as 'the superficial mantle of rock *débris*.' Later it appears as 'the extensive mantle,' etc., and 'the unconsolidated materials by which these [solid] rocks are mantled.' Every recent writer upon geology and physical geography has had to wrestle with this problem and has usually solved it by some circumlocution. The older writers, Lyell, Dana, Prestwich, Geikie, Le Conte and even Scott use only the term *soil*, and appear to do so without any sense of unfitness or inadequacy. Brigham ('Text-book of Geology') discusses 'the whole sheet of crumbled rock material which mantles most of the rocky foundation of the lands,' but finds no better term for it than 'this mantle.' Elsewhere he uses 'rocky *débris*' and 'land waste.' Gilbert and Brigham ('Introduction to Physical Geography') use several variations of the theme, 'earthy mantle that covers the rock,' 'waste cover,' 'earthy cover,' 'waste mantle.' They state explicitly: 'The student should distinguish clearly and use it [soil] only of the veneer of earthy matter which is especially fitted to support life.' Davis ('Physical Geography') commonly uses *waste* with various modifiers, as 'rock waste,' 'land waste,' 'sheet of loosened rock waste,' 'cloak of rock waste,' 'waste sheet.' In the *Journal of Geology*, Vol. 10, p. 98 ff., he uses many times the phrases 'sheet of waste' and 'cloak of waste.'

Merrill ('Rocks, Rock Weathering and Soils') strikes out boldly and manufactures a new term, *regolith*, blanket rock for the 'entire mantle of unconsolidated material, whatever its nature or origin.' For non-classical students I have translated *regolith* into *mantle rock*, and have used that term for several years with perfect satisfaction. The above quotations show how difficult it is to avoid some term expressive of the idea of a cover or mantle. *Waste* is open to the objection that it expresses a half truth in such a way as to give a false impression. It is waste only in relation to its past. In its destination and future functions it is not waste, but 'the dust of continents to be.' It is always a mantle which covers some other kind of rock, and in geography the distinction between the mantle and that which it covers is more important than the distinctions between aqueous, igneous and metamorphic rocks. I suggest, then, the term *mantle rock* for the material which Merrill has named the *regolith*, and hope that it may find favor and supply a long-felt want. It is plain Saxon, expresses the most distinctive and striking character of the material, has no misleading implications and fits readily into any place where it is needed. I find in the note-books of my students such records as these: "Lawrence Co., bed-rock limestone, mantle red clay. Green Co., bed-rock shale, mantle glacial drift." To substitute waste, detritus, *débris*, *geest*, *alluvium*, unconsolidated materials, or any other term for *mantle* in these phrases would be distinctly no improvement.

CHARLES R. DRYER.

TERRE HAUTE, IND.

ATAVIC MUTATION.

TO THE EDITOR OF SCIENCE: Dr. White's article on aggregative atavic mutation of the tomato, in *SCIENCE* for January 9 recalls to me a case of—apparently—similar atavic mutation, which Dr. White should be in a position to investigate, if, indeed, he has not already done so. When I lived in Washington, some ten years ago, we were rarely able to get any really *sweet* sweet corn, such as is so abundant here in New England. The